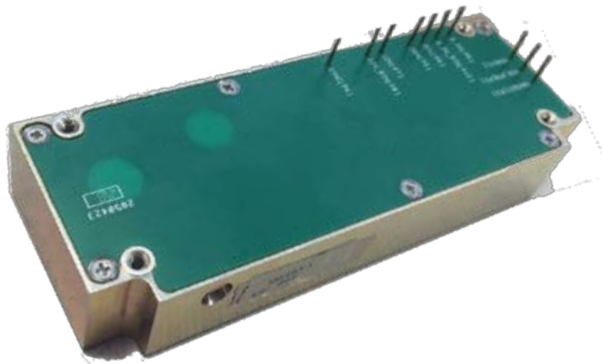


## M8263 SERIES

DC/DC POWER SUPPLY



### PRODUCT HIGHLIGHTS

- MINIATURE, HIGH DENSITY DESIGN
- LOW RIPPLE
- DUAL OUTPUT (UP TO 150W)
- DC/DC POWER SUPPLY



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<p><b>Applications</b></p> <p>Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial</p>											
<p><b>Special Features</b></p> <ul style="list-style-type: none"> <li>• Miniature size</li> <li>• High efficiency</li> <li>• Wide input range</li> <li>• Input / Output isolation</li> <li>• I2C temperature reading</li> <li>• External On/Off Inhibit</li> <li>• <u>Fixed</u> switching frequency (250 kHz)</li> <li>• External synchronization capability</li> <li>• <u>EMI/RFI</u> filters included</li> <li>• Reverse Polarity Protection</li> <li>• Indefinite short circuit protection with auto-recovery</li> <li>• Over-voltage shutdown with auto-recovery</li> <li>• Over temperature shutdown with auto-recovery</li> </ul>											
<p><b>Electrical Specifications</b></p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 33%;"> <p><b><u>DC Input:</u></b> DC Input range: 18 to 48 V<sub>DC</sub>, per MIL-STD-704F. No damage for: MIL-STD-1275A (100V for 50mSec) MIL-STD-704A (80V for 0.1 Sec)</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b><u>DC Output:</u></b> Output #1 range – 3.3V to 12V Output #1 current – max 10A Output #2 range - 1.2V to 5.5V Output #2 current – max 10A Total Output power – 150W</p> </td> <td style="vertical-align: top; width: 33%;"> <p><b><u>Isolation:</u></b> 200V between Input and Output 200V between Input and Case 100V between Output and Case</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><b><u>Line/Load regulation:</u></b> Less than 2% (no load to full load, -55°C to +85°C).</p> </td> <td style="vertical-align: top;"> <p><b><u>Efficiency:</u></b> 84% - Typical (full load, room temperature)</p> </td> <td style="vertical-align: top;"> <p><b><u>EMI/RFI:</u></b> Design to meet or exceed** MIL-STD-461F CE102, CS114, CS115, CS116, RS101, RS103</p> </td> </tr> <tr> <td style="vertical-align: top;"> <p><b><u>Ripple and Noise:</u></b> Less than 50mVp-p, typical (max. 1%) @ Input Voltage of 18V-36V without external capacitance. When connected to system capacitance ripple drops significantly.</p> </td> <td style="vertical-align: top;"> <p><b><u>Load Transient Overshoot and undershoot</u></b> Output resistance at load change of 50%-100% is 30-120mOhm (depending on output voltage). Output back to steady stated within 300-500µSec</p> </td> <td style="vertical-align: top;"> <p><b><u>Turn on Transient</u></b> Voltage overshoot during power on is less than 3% nominal voltage.</p> </td> </tr> </table>			<p><b><u>DC Input:</u></b> DC Input range: 18 to 48 V<sub>DC</sub>, per MIL-STD-704F. No damage for: MIL-STD-1275A (100V for 50mSec) MIL-STD-704A (80V for 0.1 Sec)</p>	<p><b><u>DC Output:</u></b> Output #1 range – 3.3V to 12V Output #1 current – max 10A Output #2 range - 1.2V to 5.5V Output #2 current – max 10A Total Output power – 150W</p>	<p><b><u>Isolation:</u></b> 200V between Input and Output 200V between Input and Case 100V between Output and Case</p>	<p><b><u>Line/Load regulation:</u></b> Less than 2% (no load to full load, -55°C to +85°C).</p>	<p><b><u>Efficiency:</u></b> 84% - Typical (full load, room temperature)</p>	<p><b><u>EMI/RFI:</u></b> Design to meet or exceed** MIL-STD-461F CE102, CS114, CS115, CS116, RS101, RS103</p>	<p><b><u>Ripple and Noise:</u></b> Less than 50mVp-p, typical (max. 1%) @ Input Voltage of 18V-36V without external capacitance. When connected to system capacitance ripple drops significantly.</p>	<p><b><u>Load Transient Overshoot and undershoot</u></b> Output resistance at load change of 50%-100% is 30-120mOhm (depending on output voltage). Output back to steady stated within 300-500µSec</p>	<p><b><u>Turn on Transient</u></b> Voltage overshoot during power on is less than 3% nominal voltage.</p>
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\* Thresholds and protections can be modified / removed – please consult factory.  
 \*\*Compliance achieved with 5µH LISN, shielded harness and static resistive load.

**Environmental**

Design to Meet MIL-STD-810F

**Temperature:**

Operating: -55°C to +85°C  
(baseplate)

Storage: -55°C to +125°C

**Humidity:**

Method 507.4 - Up to 95%.

**Altitude:**

Method 500.4, Procedure I & II,  
40,000 ft. and 70,000 ft. Operational

**Vibration and Shock:**

Shock - Saw-tooth, 20g peak, 11mS.  
Vibration - Figure 514.5C-17. General  
minimum integrity exposure. (1 hour per  
axis.)

**Salt Fog:**

Method 509-4

**Reliability**

150,000 hours, calculated per  
MIL-STD-217F at +85°C baseplate,  
Ground fixed.

**Environmental Stress Screening (ESS)**

Including random vibration and thermal cycles is also available. **Please consult factory for details.**

**Pin Assignment**

Pin Number	Function
Output 1	12V
Output 1 RTN	12V RTN
Output 2	5.5V
Output 2 RTN	5.5V RTN
SYNC	External clock
SDA	Temperature DATA
SCL	Temperature CLOCK

Pin Number	Function
INHIBIT	Normally Open
Vin	Power Vin
Vin RTN	Power RTN

\* All output parallel pins should be connected together for best performance.

**Functions and Signals****INHIBIT signal**

The INHIBIT signal is used to turn the power supply ON and OFF.

TTL "1" or OPEN – will turn on the power supply. (For normal operation leave the signal not connected.) TTL "0" – will turn off the power supply.

Referrer to Input RTN

**SYNC IN signal**

The SYNC IN signal is used to allow the power supply frequency to sync with the system frequency. The system frequency should be 250 kHz  $\pm$  10 kHz.

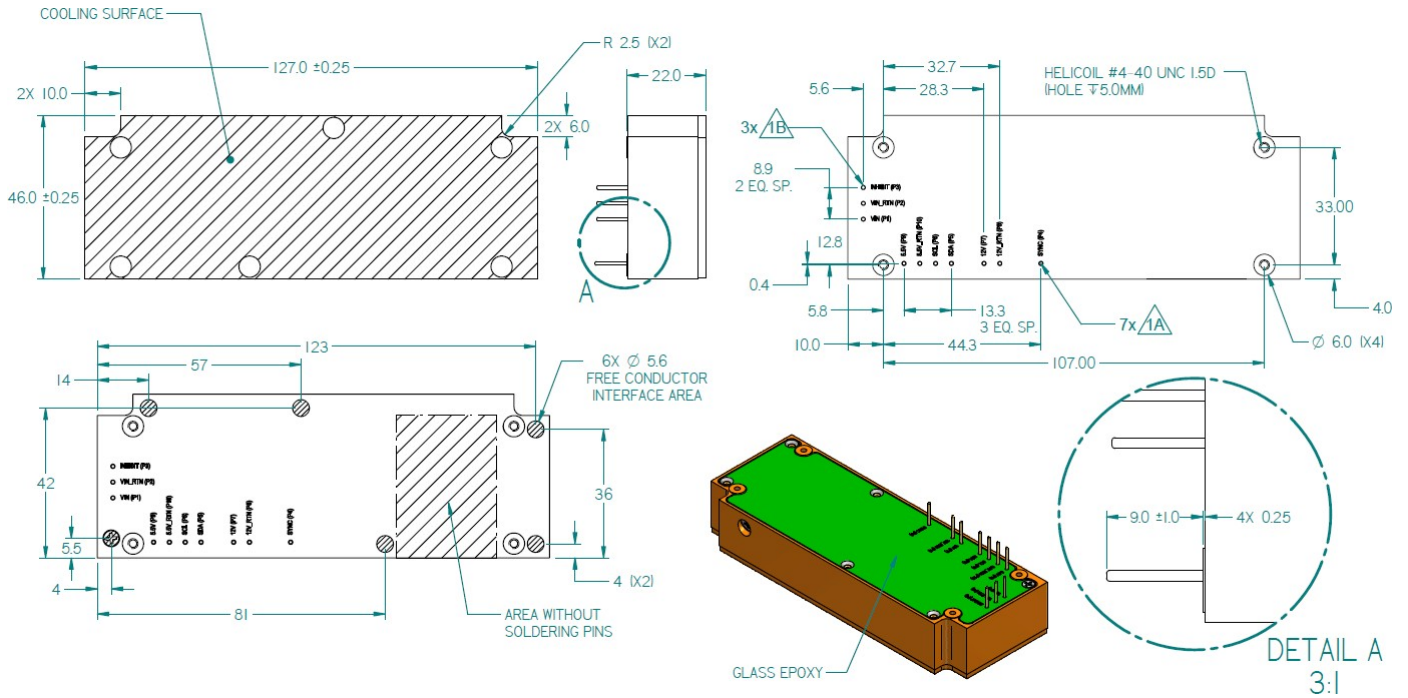
When not connected the power supply will work at 250 kHz

Referrer to 12V RTN

**SDA -I2C DATA LINE, Referrer to 12V RTN SCL -**

**I2C CLK LINE, Referrer to 12V RTN**

**Outline Drawing**



**Heat Dissipation**

Heat Dissipation Area  
5550 mm<sup>2</sup>

**Notes**

1. Dimensions are in inches [mm]
2. Tolerance is:  
.XX ±0.01 IN  
.XXX ±0.005 IN
3. Weight: Approx. 254 g (8.96 oz)

*\* Specifications are subject to change without prior notice by the manufacturer.*